

REMARKS

Claims 1-3, 7, 11, and 13-22 are pending in this application. Claims 19-22 are withdrawn from consideration to a non-elected status. Claims 1-3, 7, 11, and 13-18 were variously rejected under 35 U.S.C. § 112, second paragraph. Claims 1-3, 7, 11, and 13-18 were variously rejected under 35 U.S.C. § 112, first paragraph. Claims 1-3, 7, 11, and 13-18 were rejected under 35 U.S.C. § 103.

By this amendment, claims 14 and 18 have been cancelled, claims 1, 5, 11-13 and 17 have been amended and new claims 23 and 24 have been added without prejudice or disclaimer of any previously claimed subject matter. Support for the amendments and new claims can be found, *inter alia*, throughout the specification, for example, at page 2, lines 1-4 of the first full paragraph and in the claims as originally filed.

The amendments are made solely to promote prosecution without prejudice or disclaimer of any previously claimed subject matter. With respect to all amendments and cancelled claims, Applicants have not dedicated or abandoned any unclaimed subject matter and moreover have not acquiesced to any rejections and/or objections made by the Patent Office. Applicants expressly reserve the right to pursue prosecution of any presently excluded subject matter or claim embodiments in one or more future continuation and/or divisional application(s).

Applicants have carefully considered the points raised in the Office Action and believe that the Examiner's concerns have been addressed as described herein, thereby placing this case into condition for allowance.

Election of Species

The Examiner asserts that species of the claimed invention lack unity of invention allegedly as not being linked to form a single inventive concept under PCT Rule 13.1. Species A has been identified as nitrocellulose (organic soluble) binder and species B as water soluble binders. In the Office Action, species A (claims 13-14 and 17-18) has been constructively elected and species B

(claims 5 and 12) has been withdrawn from consideration as being directed to a non-elected invention. Applicants respectfully traverse this assertion and requirement.

Applicants respectfully submit that both species serve as bonding agents in the claimed mixtures and thus, the claims share the special technical features of a dinol-free explosive and a bonding agent. PCT Rule 13.4 permits a reasonable number of dependent claims, claiming specific forms of the invention claimed in an independent claim. Applicants submit that the pending application contains a reasonable number of dependent claims (2 different bonding agents) and that there should be no requirement to elect one species over the other. Thus, Applicants respectfully request reconsideration of the election of species requirement.

This notwithstanding, Applicants acknowledge that species A (claims 13-14 and 17-18) has been constructively elected. Applicants request that, upon allowance of a generic claim, the remainder of the species be included as provided by 37 C.F.R. § 1.141(a).

Rejections under 35 U.S.C. § 112, Second Paragraph

Claims 1-3, 7, 11, and 13-18 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection.

Although Applicants believe that the claims were sufficiently definite when considered in view of the specification and the understanding of those of skill in the art, Applicants have attempted to respond to the concerns of the Examiner in order to enhance clarity and to facilitate disposition of the present case. For example, the amended claims now clearly state that the mixture comprises a nitroester or nitramine explosive, the optional bonding agent is presented in dependent claims and claims 14 and 18 have been canceled without prejudice or disclaimer.

Applicants respectfully disagree that because “nitrocellulose” can be an explosive and/or a bonding agent, the claims are rendered indefinite. Applicants also disagree with the statement that “if one compound may be present as more than one category, then surely others may also be similarly used.” While nitrocellulose may serve as the explosive and/or the bonding agent, it is illogical, and unnecessary, to extend that observation to other components of the claimed mixtures. Whether or not a compound belongs a particular category depends solely on the nature of the compound in view of the requirement of the category. “Nitrocellulose” happens to be of use as a nitroester or nitramine explosive and also as a bonding agent.

In addition, the presence of nitrocellulose as explosive and/or the bonding agent presents no confusion as to the amounts for the stated categories of components. The presence of the bonding agent is optional. Applicants respectfully submit that it is well within the understanding of those of skill in the art that the component categories are present in the claimed mixture in ranges of weight percent.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Rejections under 35 U.S.C. §112, first paragraph

Claims 1-3, 7, 11, and 13-18 have been rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection.

The Examiner asserts that the basis for the limitation “free of dinol type explosive” is not apparent.

Applicants respectfully submit that the specification makes clear that the invention is directed to a non-toxic and non-corrosive ignition mixture that does not contain dinol, a

carcinogenic compound. See, for example, page 2, lines 1-4 of the first full paragraph and page 1, lines 17-19 of the second full paragraph.

Applicants respectfully submit that such disclosure in the specification conveys with reasonable clarity to those skilled in the art possession of the invention as of the filing date.

Applicants note that the term “dinol-free” *per se* is not in the specification. However, the subject matter of a claim need not be described literally (i.e., using the same terms or in *haec verba*) in order for the disclosure to satisfy the description requirement. M.P.E.P. §2163.02.

Thus, Applicants respectfully submit that the pending claims are in compliance with the written description requirements.

Claims 1-3, 7, 11, and 13-18 were rejected under 35 U.S.C. §112, first paragraph, as allegedly because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Applicants respectfully traverse this rejection.

The claimed invention is directed to non-toxic, non-corrosive, dinol-free ignition mixtures comprising: 5 to 40 weight percent of a nitroester or nitramine explosive, 5 to 40 weight percent of tetrazene, 5 to 50 weight percent of an oxidizing agent selected from the group listed, 1 to 20 weight percent of boron and 5 to 30 weight percent of a friction agent. The specification generally describes such mixtures made with these components used within these weight percent ranges and exemplifies 20 specific mixtures. Applicants respectfully submit that the specification as filed contains sufficient information to enable one skilled in the pertinent art to make and use the claimed invention.

Applicants respectfully disagree with this rejection for reasons already of record in this application and respectfully submit that a *prima facie* case for lack of enablement has not been established.

For a *prima facie* case on non-enablement, the burden is on the Office to demonstrate that there is a reasonable basis to question the presumptively sufficient disclosure made by applicant. See, for example, *In re Wright*, 27 USPQ2d 1510 (Fed. Cir. 1993).

The Patent Office is required “to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement.” *In re Marzocchi*, 439 F.2d 224, 169 USPQ at 370; M.P.E.P. §2164.04. Applicants respectfully submit that the Examiner has not produced adequate evidence to support a lack of enablement, *i.e.*, to establish that with the teachings in the specification, a person skilled in the art could not make or use the claimed compositions.

Again, Applicants respectfully point to the reasons of record in this application as to why a *prima facie* case for lack of enablement has not been established.

The Examiner cites the background section of Applicants’ specification as pointing “to the number of problems with finding suitable ignition compositions that avoid problems of the prior art” and asserts that “unpredictability was well known to applicants.” Applicants respectfully disagree with this characterization of the teaching of the specification in the Office Action and that it supports an enablement rejection.

The background section of the specification describes a variety of ignition mixtures including non-corrosive mixtures based on tetrazene containing heavy metals and those containing dinol and tetrazene but not heavy metals. These known mixtures also contained other components such as oxidizing agents, friction agents, and active propellants such as nitrocellulose. The background section does describe the difficulty of making a particular mixture without an explosive. However, components and composition of ignition mixtures are well-known in the art as demonstrated, for example, by that described in the references from Mei et al and Erickson et al. cited below. The Examiner has yet to provide any objective reason to doubt that the ranges stated in the claims.

Therefore, and contrary to the allegation of “great unpredictability” in the rejection, the instant invention does not require undue experimentation to make and use. This follows because no more than repetitive, and thus routine, experimentation is needed to make and test the claimed invention with the various percentages of components. Applicants respectfully submit that repetitive and routine experimentation is the very opposite of “undue experimentation” such that where the experimentation is repetitive and routine, there is no basis to support an allegation of lack of enablement.

Applicants respectfully submit that the pending claims are in compliance with the enablement requirements.

In sum, Applicants submit that the pending claims fall within the subject matter that is described in and enabled by the specification. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph.

The Rejections Under 35 U.S.C. § 103(a)

Claims 1-3, 7, 11 and 13-18 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Mei et al. (U.S. Pat. No. 5,567,252, “Mei ‘252”) in view of Erickson et al. (U.S. Pat. No. 5,547,528, “Erickson”) and Mei et al. (U.S. Pat. No. 5,167,736, “Mei ‘736”). Applicants respectfully traverse these rejections.

A *prima facie* case of obviousness requires that three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success

must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20USPQ2d 1438 (Fed. Cir. 1991); MPEP §2143. If any one of these three criteria is not met, a *prima facie* case of obviousness has not been established. As presented below, Applicants respectfully submit that a *prima facie* case of obviousness has not been established.

The primary reference Mei '252 describes priming mixes comprising dinol as an initiating explosive. See, for example, column 2, lines 13-14, where Mei '252 states that “[t]he **core** of the present invention is the combination of dinol, boron as a sensitizer, and iron oxide as the oxidizer” (emphasis added). Mei '252 does not provide any teaching or suggestion that the priming mixes taught therein be made without dinol.

In support of the rejection, the Examiner cites column 3, lines 8-22 and lines 38-43 of Mei '252 as teaching the “basic invention” and then lists components of the mix (Office Action, paragraph 9). Applicants respectfully point out that, contrary to that presented in the Office Action, the Mei '252 citations state that dinol is a component of the mix (e.g., “priming composition ... was prepared which consisted of 45% by weight dinol ...,” “dinol was combined with the ferric oxide and Ball Powder® ...,” and the “mix in accordance with the invention may consist of 20% to 50% dinol ... ”).

This is in sharp contrast to the instant claims which do not comprise dinol.

Erickson describes non-toxic primers comprising DDNP (diazodinitrophenol), also known as dinol. Mei '736 describes priming mixes comprising dinol as an explosive. See, for example, column 2, lines 19-20, where Mei '736 states that “[t]he **core** of the present invention is the combination of dinol and boron” (emphasis added). Neither Erickson nor Mei '736 provides any teaching or suggestion that the priming mixes taught therein be made without dinol.

Neither Erickson nor Mei '736 supply what is missing from the primary reference, Mei '252, and the combinations of Mei '252 and the secondary references do not teach or suggest the claimed invention, thus do not render the claimed invention obvious. None of the references, either alone or

in combination, provide any suggestion or motivation to modify the teachings therein to arrive at the claimed invention, a non-toxic, non-corrosive, dinol-free ignition mixture. Further, since they provide no teaching or suggestion of the claimed invention, the cited references do not provide an expectation of success of the claimed invention, i.e., a non-toxic, non-corrosive, dinol-free ignition mixture.

In sum, Applicants respectfully submit that a *prima facie* case of obvious has not been made.

The Examiner asserted in paragraph 9 of the Office Action that, with regard to the broad claims, "Mei '252 may be the epitome of obviousness, anticipation."

Applicants respectfully disagree with this assertion. For a claim to be anticipated by a reference, the reference must teach each and every element of the claim. As outlined above, Mei '252 does not teach a dinol-free primer mix. Accordingly, Mei '252 neither anticipates nor makes obvious the claimed invention.

Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a).

CONCLUSION

Applicants believe that all issues raised in the Office Action have been properly addressed in this response. Accordingly, reconsideration and allowance of the pending claims is respectfully requested. If the Examiner feels that a telephone interview would serve to facilitate resolution of any outstanding issues, the Examiner is encouraged to contact Applicants' representative at the telephone number below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket No. **321402000200**.

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